

# Evaluative Study of Two Versions of a Seminar on Mind-Affecting Drugs

NICHOLAS PARLETTE, M.P.H., GAYLE HUTTON, B.A.,  
and MARVIN ROSEN, Ed.D.

**E**XTENSIVE changes in the policies and programs of public health in recent years have sharpened the need for effective presentations in continuing education if health personnel are to keep abreast of these changes. Meeting these emerging needs has long been the concern of the Program of Continuing Education in Public Health, an organization sponsored by schools of public health in the West—Uni-

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*Mr. Parlette is director and Mrs. Hutton is a program assistant, Program of Continuing Education in Public Health. Dr. Rosen is a principal of Evaluation and Research Associates, Los Angeles. The study was supported in part by the Hill-Rhodes formula funds in the schools of public health.*

*A complete report of this study, the questionnaires, the statistical tables, and the tearsheets of this summary article can be obtained from Nicholas Parlette, Director, Program of Continuing Education in Public Health, 655 Sutter St., San Francisco, Calif. 94102.*

versity of California at Berkeley, University of California at Los Angeles, University of Hawaii, and Loma Linda University—and the Western Branch/Western Regional Office of the American Public Health Association, Inc. The program provides postgraduate education on topics of concern to professional health workers in the 13 Western States.

The 3-day course on "Mind-Affecting Drugs" is one of about 50 courses that have been used in the Program of Continuing Education in Public Health. Joseph Downing, M.D., member of the faculty advisory committee on mental health for the program and president of the San Francisco Gestalt Therapy Institute, and David Smith, M.D., medical director of the Haight-Ashbury Medical Clinic and assistant clinical professor of pharmacology at the University of California Medical Center, developed and conducted the course.

After four live presentations of the course, Downing and Smith, at the request of KGO-TV in San Francisco, prepared 20 half-hour videotapes for broadcast as

a public service. The TV station permitted the Program of Continuing Education in Public Health to duplicate the TV series on 1-inch videotape. Program staff members selected 13 of the 20 taped lectures, wrote discussion guides for the tapes, and offered the videotaped seminar as an alternative for the live 3-day seminar.

## The Two Educational Methods

In January 1970, the videotaped seminar was presented in Boise, Idaho, to 47 health professionals. It consisted of 13 lectures that lasted 25 minutes each, followed by guided discussions. Two-hour sessions were held five consecutive Monday evenings. The sixth week, Smith conducted an all-day summary session.

In March 1970, Downing and Smith conducted a live lecture seminar in Reno, Nev., for 62 health professionals. It consisted of three consecutive 8-hour days of lectures and discussion, films, a light show, and interviews and discussions with drug users.

A private firm was commissioned to evaluate the two in-

structional procedures. The purpose was to determine whether the objectives of the course—to increase knowledge and modify attitudes about mind-altering drugs among public health professionals—were accomplished and to ascertain which of the two procedures was more effective in reaching these objectives.

We anticipated that the firm's conclusions could be generalized to other courses of the program, but they had to be restricted to the two presentations because of sample size and lack of control of variables. The results did provide a basis for hypothesizing on the variable factors that contributed to the observed differences of effect which, in turn, led to more precise formulations of the evaluative research needed to improve the quality of decisions about courses in the Program of Continuing Education in Public Health, and perhaps in similar programs.

*Study design and procedure.* One method of comparing the Boise group (47 participants) and the Reno group (62 participants) was a before-and-after design to analyze changes in knowledge and attitudes. A random half of each group was tested individually concerning their knowledge of drugs before instruction, and the same persons were tested identically after instruction. The other half of each group was tested in the same manner on the attitudes-toward-drugs scale. Both the information and attitude scores were matched to each participant and examined for individual changes and the proportion of participants who changed their selections of various alternatives between the pretest and the post test.

Another 108 participants in four previous offerings of the lec-

ture seminar also were randomly selected and given the same knowledge and attitude tests. Since no pretesting had been conducted earlier, an after-only control-group design was adopted by using the combined Boise-Reno pretested groups as the untreated control group.

*Treatment variables.* Before describing the results of these tests, certain variable differences between the presentations should be defined. First, the Reno workshop entailed a greater amount of instruction. Second, the live lecture format in Reno provided more personal interaction with the instructors and with the drug users. Third, there necessarily were differences in content; for example, different questions were asked by the participants. In addition, a show with music, light, and art characteristic of the drug subculture, and the participation of drug users were features of the Reno but not the Boise seminar. Fourth, Reno's 3-day concentrated seminar could have produced effects different from those of Boise's 6-week spaced seminar.

### **Effects of the Procedures**

In assessing the cognitive and attitudinal effects of both the Boise and Reno seminars, answers to the following questions were sought:

1. Did the participants change as a consequence of the presentation?
2. Did the participants in the different groups change by different amounts?
3. Was there evidence of long term change in participant behavior following the presentation?
4. Was there evidence of long term retention of change effects?

*Cognitive.* Data from the information-about-drugs test

showed reliable evidence of learning from both presentations at the 0.001 level of confidence (1). (The Wilcoxon matched-pair signed-ranks procedure was used for both the pretest and post test comparisons. A one-tail test was used since the direction of change was predicted on the basis of course content.) This indicated less than one chance in a thousand that such pretest and post test differences would be obtained by chance in the predicted direction if in fact there were no differences. The data also showed reliable evidence that the Boise (videotape seminar) participants learned more than the Reno (live workshop) participants at the 0.05 level of confidence (2). (T-tests were used for this and all subsequent comparisons, unless otherwise noted. A two-tail test was used here since there was no basis for predicting whether either treatment might be superior.)

To ascertain if there was a difference in states of knowledge between the two groups when entering the study, the pretest scores were compared. The data showed no reliable evidence of pretest differences between the two groups.

The data showed a reliable difference ( $P < 0.001$ ) between the delayed post test scores obtained by a sample of prior participants more than a year after their participation in the study and the pretest scores obtained by the combined Boise-Reno pretest sample. To the extent that the Boise-Reno participants may be regarded as representative of a random sample of the total population of enrollees in this study, the data suggested that a significant proportion of the information learned from the seminar was retained over time.

Comparison of the immediate post test scores obtained by the Reno group and the delayed post test scores obtained by prior participants in live workshops failed to show any reliable differences. These data are consistent with previous findings suggesting that no significant proportion of information learned in the workshop is forgotten over time.

To pinpoint specific areas of strength and weakness in each presentation, the informational objectives of the course were classified into six topical categories:

1. Historical and social backgrounds
2. Colloquial and technical definitions
3. Legal and social status of various drugs
4. Effects of various drugs
5. Treatment and prevention alternatives
6. Other miscellaneous information

There was no statistically reliable superiority for either group in four categories (1, 3, 5, and 6), but in the remaining categories (2 and 4) the Boise group was superior at the 0.07 (two-tail) and 0.15 confidence levels.

Because of the small size of both the samples and subtests, our findings should be interpreted as suggesting that systematic differences between the treatments may have been obtained.

*Attitudinal.* The purpose of the attitudes-toward-drugs scale was to assess attitudes toward statements based on the objectives specified by the instructors and on related material in the course. The data showed reliable evidence of pretest and post test differences in scores on the attitudinal scale in the direction advocated by the instructors, following both presentations, at the

0.001 level of confidence. The data showed no reliable evidence, however, that either group was superior.

Pretest scores for the two groups were compared to check for a difference in attitudes on entering the project. The data showed no reliable evidence of pretest differences between the two groups.

Another way of assessing the effects on attitudinal responses was to examine the proportion of each group that equaled or exceeded a criterion measure. To arrive at this measure, the test was administered to the instructors, and their responses to each statement were averaged; thus, we obtained a criterion level of response for each statement. Examined in this way, the data showed that the Boise presentation was more effective ( $P = 0.014$ ) than the Reno presentation in the proportions reaching the criterion of a significantly greater number of statements.

When comparing the delayed post test scores of prior participants and the pretest scores of the combined Boise-Reno groups, we found that a significant proportion of the changed attitudinal responses learned during the seminars was retained over time ( $P < 0.001$ ). However, comparison of the immediate post test scores of the Reno group with the scores of prior participants showed that a significant proportion of changed attitudinal response also was lost over time ( $P < 0.05$ ).

The framework of this study did not permit systematic variation in the experimental variables or control of the variables extraneous to the desired comparisons. As a consequence, it was impossible to rule out the effects of the considerable number of

extraneous variables with respect to systematic differences between the comparison groups. Two variables had a high probability of influencing the observed effects.

First, the comparison groups could not be regarded as random samples drawn from the same population. Chi-square analysis revealed that systematic differences were found between the groups (reliable at  $P < 0.01$ ) with respect to demographic information gathered about the participants: occupational classification, professional level, and age.

Second, the effects of taking the pretest on the post test scores were not formally controlled. Even though the prior group of participants was not pretested and still obtained significantly higher scores than the combined Boise-Reno group pretested, the comparison involves noncomparable groups. The higher scores of the prior participants could have resulted from the interaction of treatment and subsequent experience.

Also, the interaction of selection and method was not controlled. For example, more highly motivated persons may have been more attracted to one method than another. There also may have been a reaction by the Boise group to the more novel videotape treatment. One must consider, for example, to what extent the superiority of the Boise group should be attributed to an awareness of being "guinea pigs" in a study of teaching by videotape.

### Participant Reactions

Participants in the courses completed questionnaires and were randomly selected during the presentations for interviews with staff members. Participants in both seminars rated the mind-affecting drugs course as having

“high” to “very high” priority among other public health courses that were available. They also considered the approach of the course as “reasonable” to “very reasonable,” and identified the following aspects of the courses as particularly pleasing to them:

- Facts were based on research and actual experiences of the instructors. Both the information and the sources were regarded as highly credible.
- Style of the presentation was frank, calm, and factual, contrasted with other projects to which many referred.
- Use of the discussion group method was helpful.
- Use of handout materials for

both preparation and later reference was helpful.

- The presentations led to increased knowledge about drugs and a desire for more information. This fact was mentioned frequently by participants in both groups.

About 3 months after each presentation was concluded, the participants were questioned to determine if they had been prompted by this experience to engage in any drug-related community activities other than those connected with their jobs. More than 35 percent of the Boise participants reported that they had been so involved and that participation in the course was a major factor in their involvement.

## Conclusions

To maintain behavior at criterion levels, modified attitudes may need additional boosting with followup programming. Formats for videotape seminars can, under certain conditions of use, produce cognitive and attitudinal effects on a par with more costly formats. Further study of the effects of format variables associated with continuing education programs for adult professionals is needed.

## REFERENCES

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**PARLETTE, NICHOLAS (Program of Continuing Education in Public Health), HUTTON, GAYLE, and ROSEN, MARVIN J.: *Evaluative study of two versions of a seminar on mind-affecting drugs. Program of Continuing Education in Public Health. HSMHA Health Reports, Vol. 86, October 1971, pp. 933-936.***

A total of 217 adult professionals who were enrolled in a continuing education course on mind-affecting drugs participated in a study of the relative effects of two alternate versions of presenting a seminar on the knowledge and attitudes of the participants.

A before-and-after study design was used to compare the two groups enrolled in the alternate methods of presentation. An after-only design for the control group was used to assess the long term effects on prior participants who were post tested by mail. The participants were surveyed by questionnaire and interviewed for their reactions to the presentations.

Both versions of the seminar produced reliable increases in knowledge and changes in attitude in

the advocated direction, as measured by the instruments developed for the study: the information-about-drugs test and the attitudes-toward-drugs scale.

The Boise group (videotape seminar) had reliably greater gains in knowledge and in attitude changes than the Reno (live seminar) group. Prior participants had reliably greater knowledge and advocated attitudes than their control group counterparts who had not attended any version of the seminar. The attitudes of participants 1 year or more after the presentations, however, appeared to regress toward former levels, while increases in knowledge apparently were retained. The participants, generally, reacted favorably to both versions of the seminar.